It's Under Control®

T2-B

Universal System Controller

Operation Guide

70-210035-18 V1.0

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FEDERAL COMMUNICATIONS COMMISSION NOTICE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received including interference that may cause undesired operation.

MMURTI1000

IC (Canada): 3166-RTI1000

117 612 914

DECLARATION OF CONFORMITY (DOC)

The Declaration of Conformity for this product can be found on the RTI website at: www.rticorp.com/declaration

BATTERY DISPOSAL

For environmental reasons, your T2-B Universal System Controller uses "environmentally sound" Lithium-ion rechargeable batteries. These batteries do not contain any poisonous heavy metals that can damage the environment. In the interest of recycling, please do not dispose of these batteries in the household waste at the end of their useful life. Instead, dispose of them at an appropriate collection site.

SAFETY SUGGESTIONS

Read Instructions. Read all safety and operating instructions before operating the unit.

Retain Instructions. Keep the safety and operating instructions for future reference.

Heed Warnings. Adhere to all warnings on the unit and in the operating instructions.

Follow Instructions. Follow operating instructions and instructions for use.

Heat. Keep the unit away from heat sources such as radiators, heat registers, stoves, etc., including amplifiers that produce heat.

Do Not Open Battery Compartment. This device contains Lithium-Ion or Lithium-Polymer batteries. Batteries should only be replaced by an authorized service center or trained installer.

Power Sources. Connect the unit only to a power supply of the type described in the operating instructions, or as marked on the unit.

Power Cord Protection. Route power supply cords so that they are not likely to be walked on or pinched by items placed on or against them, paying particular attention to the cord plugs at power receptacles and at the point at which they exit from the unit.

Water and Moisture. Do not use the unit near water—for example, near a sink, in a wet basement, near a swimming pool, near an open window, etc.

Object and Liquid Entry. Do not allow objects to fall or liquids to be spilled into the enclosure through openings.

Servicing. Do not attempt any service beyond that described in the operating instructions. Refer all other service needs to qualified service personnel.

Damage Requiring Service. The unit should be serviced by qualified service personnel when:

- The power supply cord or the plug has been damaged.
- Objects have fallen or liquid has been spilled into the unit.
- The unit has been exposed to rain.
- The unit does not appear to operate normally or exhibits a marked change in performance.
- The unit has been dropped or the enclosure has been damaged.

WARNING!

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE.

LIMITED WARRANTY AND DISCLAIMER

Remote Technologies Incorporated warrants its products for a period of one (1) year (90 days only for included battery packs) from the date of purchase from Remote Technologies Incorporated or an authorized Remote Technologies Incorporated distributor.

This warranty may be enforced by the original purchaser and subsequent owners during the warranty period, so long as the original dated sales receipt or other proof of warranty coverage is presented when warranty service is required.

Except as specified below, this warranty covers all defects in material and workmanship in this product. The following are not covered by the warranty:

Damage resulting from:

1. Accident, misuse, abuse, or neglect.
2. Failure to follow instructions contained in this Guide.
3. Repair or attempted repair by anyone other than Remote Technologies Incorporated.
4. Failure to perform recommended periodic maintenance.
5. Causes other than product defects, including lack of skill, competence or experience of user.
6. Shipment of this product (claims must be made to the carrier).
7. Being altered or which the serial number has been defaced, modified or removed.

Remote Technologies Incorporated is not liable for any damages caused by its products or for its failure of its products to perform, including any lost profits, lost savings, incidental damages, or consequential damages.

Remote Technologies Incorporated is not liable for damages based upon inconvenience, loss of use of the product, loss of time, interrupted operation, commercial loss, any claim made by a third party or made by you for a third party.

Remote Technologies Incorporated's liability for any defective product is limited to repair or replacement of the product, at our option.

If your T2-B Universal System Controller needs service, please contact Remote Technologies Incorporated by telephone, fax or E-mail for return information. **Please do not return products to Remote Technologies Incorporated without return authorization**.

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CHAPTER 1 | WELCOME

Thank you for purchasing the T2-B Universal System Controller.

The T2-B combines the power and flexibility of a graphic LCD touchscreen with an ergonomic design that permits effortless one-handed operation. This design overcomes the need for a compromise between form and function. Sleek and perfectly balanced, the T2-B takes complete control of the home theater, replacing all other remotes. It features an intuitive, easy to read LCD that can display custom buttons, text, graphics, symbols, icons, and scrolling lists. In addition to the backlit display, a variety of "hard" keypad buttons allow easy access to frequently used functions.

Programming is easy and convenient thanks to the Windows® based Integration Designer™ software. Because RTI's remote control products are sold only through professional installers/programmers, and never directly to consumers, it is our philosophy to not incorporate programming capability directly into our products. Instead, we are committed to providing our dealers with the hardware and software tools that allow them to create re-usable programming databases and templates in the most efficient and reliable way possible.

The T2-B is capable of both infrared and radio frequency output. Optional RF receivers are available for transmission through walls and cabinets. The RF receivers connect to an RTI control system for the ultimate in control reliability and flexibility. RTI control systems provide many advanced features such as IR routing, local macro execution, power sensing, and RS-232 control.

COMPATIBILITY

The T2-B and *Integration Designer*™ software are compatible with infrared (IR) commands with carrier frequencies between 15KhZ and 460KhZ, as well as those commands that do not use a carrier. This covers virtually all of the remotes that exist to date.

SOFTWARE REQUIREMENTS

The recommended minimum system requirements needed to run the *Integration Designer*™ software are as follows:

- Windows 2000®, Windows XP® or later version.
- A free USB port.
- At least 256 Megabytes of RAM.
- At least 250 Megabytes of free disk storage.
- Screen resolution of 800x600 with 16-bit color.
- Optional printer for printing reports.

CHAPTER 1 | WELCOME

UNPACKING AND INSPECTION

After unpacking your new T2-B Universal System Controller, save all of the packing materials in case you ever have to ship the unit.

Thoroughly inspect the T2-B and packing materials for signs of damage. Report any damage to the carrier immediately. Report any equipment malfunctions to Remote Technologies Incorporated or an authorized Remote Technologies Incorporated distributor.

PRODUCT CONTENTS

Contents within the box include the following items:

- One (1) T2-B Universal System Controller
- One (1) Docking station
- One (1) Universal power supply for docking station
- One (1) Operation guide

CHAPTER 2 | INTRODUCTION

FEATURES

The T2-B provides superior quality and reliability as well as these features:

- Comfortable ergonomic design permits effortless, one-handed operation.
- Easy-to-read LCD to display custom buttons, text, graphics and scrolling lists.
- Digital matrix touchscreen never needs calibration.
- Tilt switch can automatically turn on the backlight when picked up.
- Extremely bright, backlit display and keypad.
- Three-way rocker switch for scrolling list navigation.
- Intuitive layout of keypad buttons for commonly used functions
- Transmits IR and RF (or both - on a single button press!).
- Optional RF receiver allows you to transmit through walls, cabinets, etc.
- System includes a Lithium-Ion battery and docking station.
- Extremely wide IR transmitting frequency range.
- Optional 'Voltage' and 'Video' sensing modules to monitor power status of equipment when used with certain RTI processors.
- Optional interface for RS-232 controlled equipment when used with certain RTI processors.
- Non-volatile Flash memory stores your system configuration even when power is not present.
- Field upgradable firmware.
- USB Programming.

IMPORTANT NOTES

Please read these important notes about the T2-B:

- The T2-B should be placed in an area where it is around normal room temperature (between 60° F to 90° F). If the temperature is too hot, the display appears dim. If the temperature is too cold, the display appears dark and may respond slowly.
- Do not use sharp objects on the touchscreen. It is designed to operate with a touch of your finger.
- Do not let the T2-B get wet. It should not be handled with wet hands or placed in an area where it could get wet.
- Do not subject the T2-B to smoke, dust, or vibrations. The display may be damaged from excessive shock or vibration.
- Only use the power supply that is provided with the T2-B. Using the wrong type of power supply may result in damage to the battery or electronic components.
- Do not disassemble the unit. Service of the T2-B should be performed by authorized personnel only.

CHAPTER 2 | INTRODUCTION

CLEANING

Occasional cleaning may be required, depending on use. It is recommended that you create a "Clean" button somewhere on the Home page of the T2-B. This button should link to a page that does not contain commands or macros that could be inadvertently executed while cleaning the unit. The "Clean" page could contain a text message or graphic of your choosing such as:

To clean your T2-B, lightly dampen a lint-free cloth with a glass cleaner or mild detergent, and wipe the touchscreen, keypad and outer surfaces.

BATTERY AND DOCKING STATION

The T2-B uses a Lithium-Ion rechargeable battery. This battery does not exhibit any type of "Memory Effect" from being charged too often. Since the T2-B can safely be charged after each use, a docking station is included for convenience. If left out of the docking station, the T2-B will remain in sleep mode for 1 – 2 months before shutting down. At that point the battery must be recharged.

The T2-B Docking Station can be placed on a flat surface such as a shelf or table, or it can be mounted to a wall using the mounting holes on the back of the unit.

If the T2-B battery capacity is reduced to approximately one hour of remaining run-time, a low battery icon will appear in the upper left corner of the display:

At this point the T2-B must be placed into the docking station to recharge the battery.

The docking station LED illuminates red to indicate a charge in progress. The LED will illuminate blue when the battery in the unit is fully charged

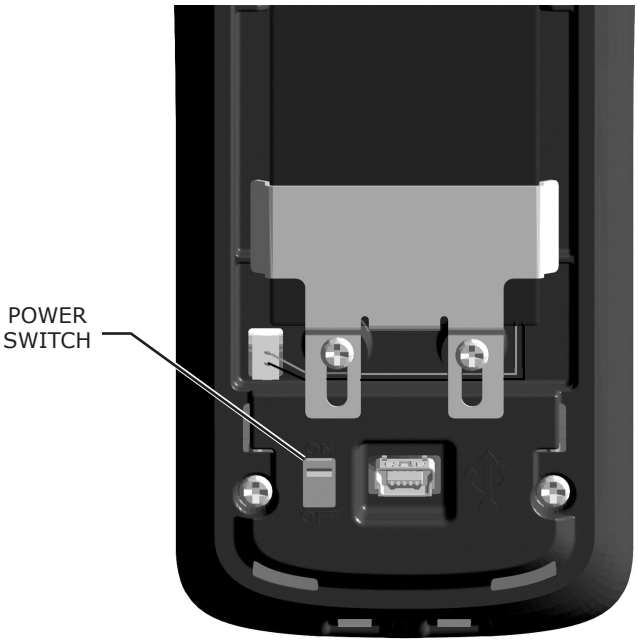
or does not need to be charged. A fully discharged battery will take approximately 2-4 hours to completely re-charge.

GETTING STARTED

NOTE: The following steps for initial installation including removing the battery door should be performed by an authorized service center or trained installer only.

Start by inserting the battery connector into the mating plug on the T2-B. Make sure the connector is oriented properly before attempting to insert it. Next, turn the unit on by sliding the power switch into the "ON" position (toward the battery).

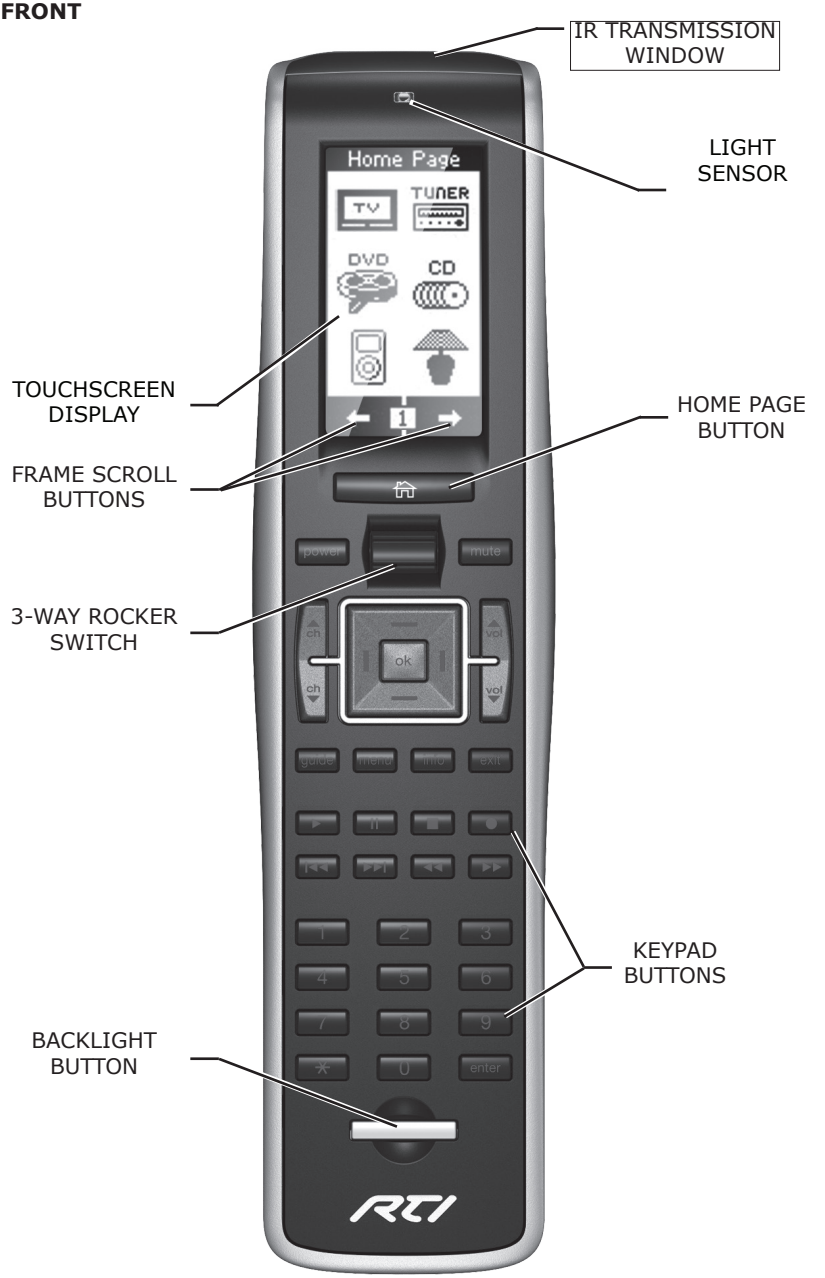
The T2-B is turned-on by touching any area of the display or any keypad button. If the tilt sensor is enabled, picking up the unit will also turn it on. During normal use the T2-B turns-on instantly from its sleep mode.



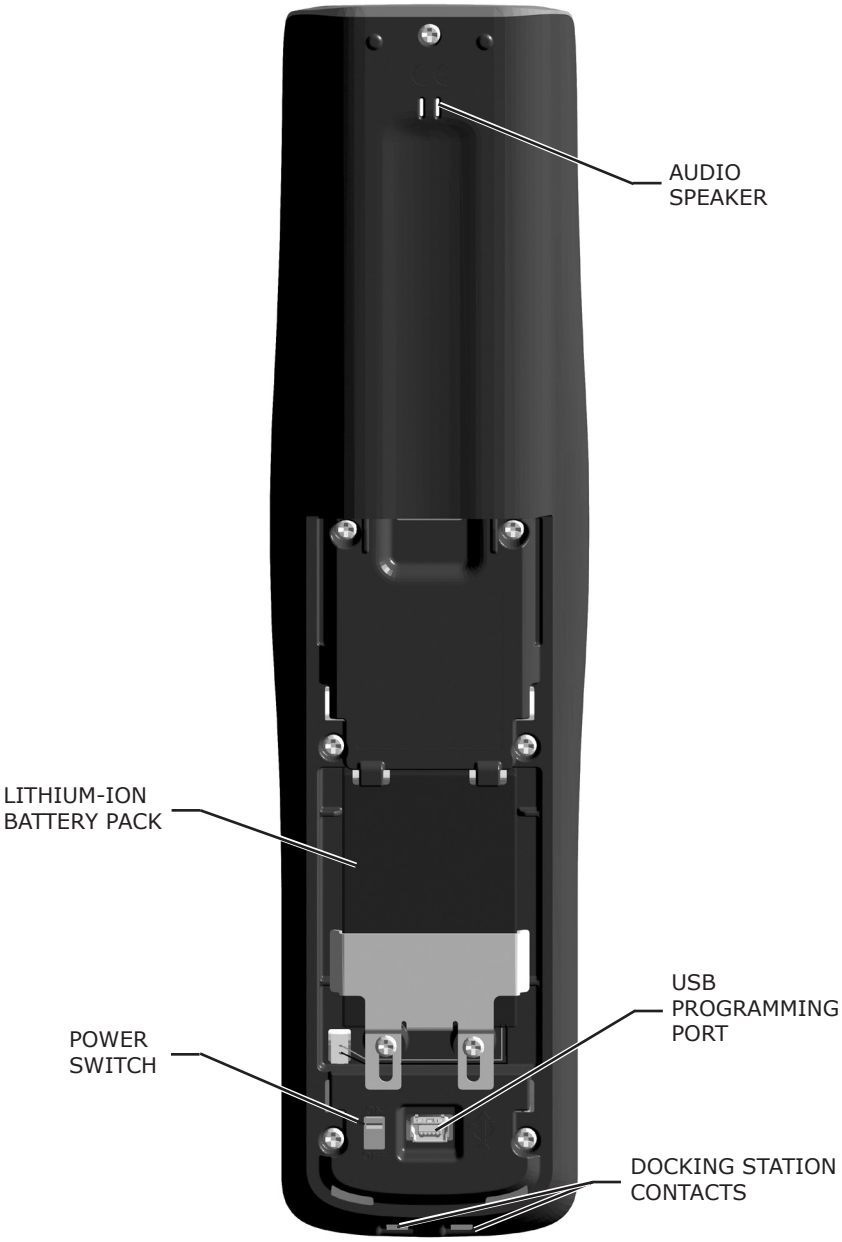
CHAPTER 2 | INTRODUCTION

REMOTE REFERENCE

FRONT



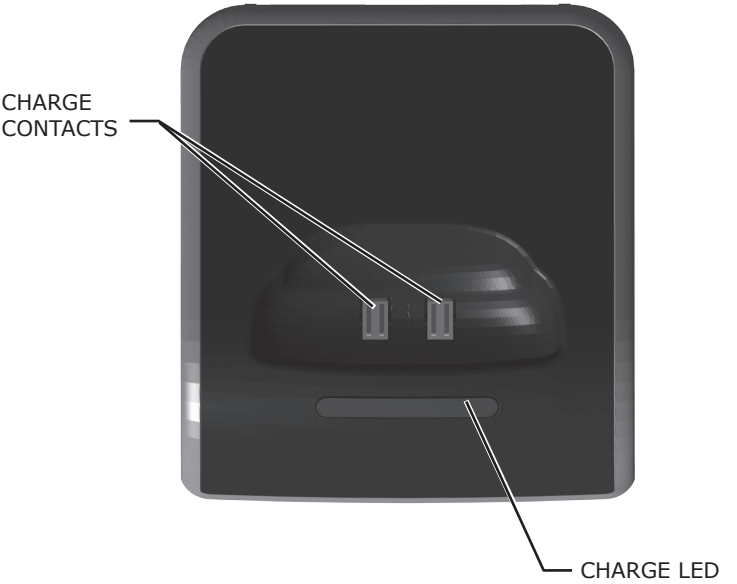
BACK


AUDIO
SPEAKER
LITHIUM-ION
BATTERY PACK
USB
PROGRAMMING
PORT
POWER
SWITCH
DOCKING STATION
CONTACTS

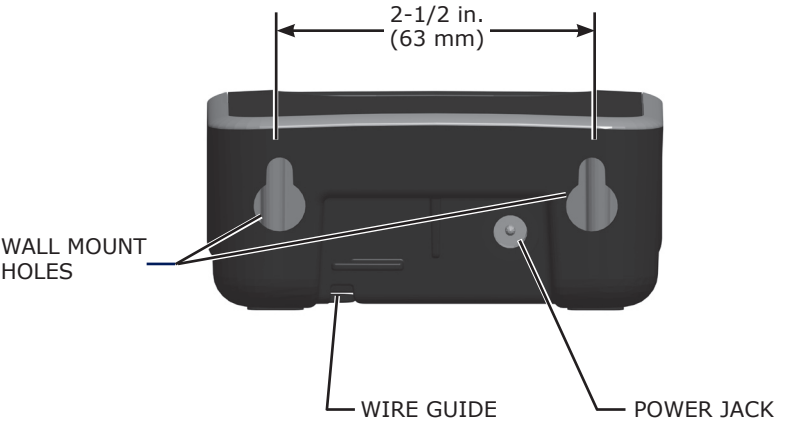
CHAPTER 2 | INTRODUCTION

DOCKING STATION REFERENCE

TOP



BACK



CHAPTER 3 | OPERATION

PROGRAMMING THE T2-B

The T2-B is programmed using *Integration Designer*™ software, RTI dealers can download the software from:

www.rticorp.com/dealers

A PC running Windows® 2000 or higher with a USB port is required. The required USB cable is included with the RTI IR-PRO dealer kit.

THE TOUCHSCREEN DISPLAY

The touchscreen display is organized as a series of pages and frames. A page can consist of up to 12 frames of information having one frame displayed on the screen at a time.

Normally each frame on a page contains objects (buttons, text, graphics, and symbols) that are related in some way. For instance, they may all display information necessary for controlling a particular VCR.

THE MAIN MENU

By default, the remote has one Main Menu page; all other pages are considered submenus. Any page can contain a button that will display any other page when selected.

Normally the Main Menu page is used to display the names of the submenus (e.g., the equipment being controlled). The submenus may consist of one or more pages. The remote will support 63 pages plus the Main Menu page; each page can consist of up to 12 frames.

A representation of a programmed Main Menu page is shown below.

Pressing the Main Menu key at any time will return you to the Main Menu page (unless a different page is assigned using *Integration Designer*™ software).

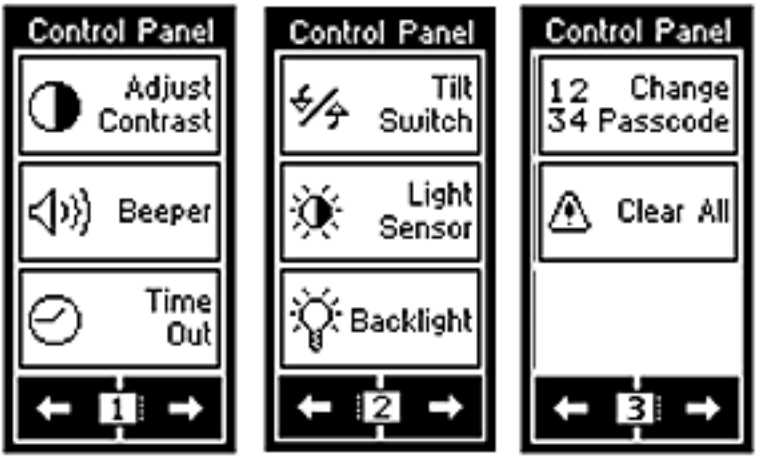
CHAPTER 3 | OPERATION

THE CONTROL PANEL PAGE

The Control Panel page can be displayed by pressing and holding the backlight key for at least 3 seconds.

You can also access the Control Panel page by assigning a "Control Panel" page link to a button using *Integration Designer*™ software.

The Control Panel consists of the following two frames:



To change frames, press the frame Left ← or frame Right → buttons on the bottom of the touchscreen.

To return to your Main Menu, press the Main Menu key.

ADJUST CONTRAST

This button displays a window that allows you to adjust the LCD contrast. Press the Left Arrow or Right Arrow keypad buttons to adjust. Press the OK button in the window to close.

BEEPER

This button displays a window that allows you to turn the audible beep On or Off. The beeper provides feedback that a button was pressed. Press the OK button in the window to close.

TIME OUT

This button displays a window that allows you to adjust the amount of time the unit stays awake after the last button press. The time is variable from 1 second to 60 seconds (default is 10 seconds). Press the arrows to the left or right of the Time Out setting to adjust the time. Press the OK button in the window to close. During Sleep mode, the remote uses virtually no battery power.

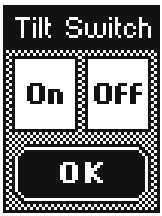
TILT SWITCH

This button displays a window that allows you to adjust the settings for the built in tilt switch, which is a device that turns the remote on when tilted past a 45 degree angle.

On means the tilt switch is active and will turn on display and backlight when picked up.

Off means the tilt switch is inactive.

Press the OK button in the window to close.



CHAPTER 3 | OPERATION

LIGHT SENSE
This button displays a window that allows you to enable or disable the front panel ambient light sensor.
On means the Light Sensor is enabled. This will cause the backlight brightness to dim or brighten in response to changes in the ambient room light.
Off means the Light Sensor is disabled.
Press the OK button in the window to close.

BACKLIGHT LEVEL - Light Sensor Disabled
This button displays a window that allows you to adjust the backlight brightness for the T2-B. If the light sensor is disabled, there is only one backlight level to adjust. Press the left arrow or right arrow buttons in the window to adjust. Press the OK button in the window when finished.

BACKLIGHT LEVEL - Light Sensor Enabled
If the light sensor is enabled, there are two backlight levels to adjust. The backlight brightness will automatically change between the two levels, depending upon the ambient lighting conditions. Press the left arrow or right arrow buttons in the window to adjust. Press the OK button in the window when finished.

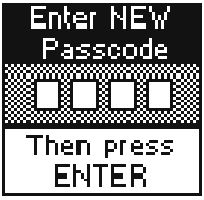
CHANGE PASSCODE

This button displays a window that allows you to set the passcode that is used to limit access to the Clear All function on the control panel page, as well as the Button Lockout function that is available on all buttons.

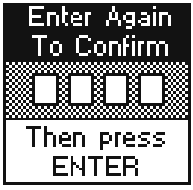
When you press the Change Passcode button, the screen will prompt you to enter the old passcode using the hard keys, then press the Enter key on the keypad.

(The default code is 0000).

Now enter a new four-digit passcode, then press Enter.



You will be prompted to enter the new four-digit passcode again for confirmation, then press Enter.



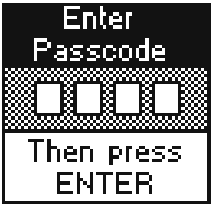
When new code is entered successfully, the Code Changed window will pop up to let you know you have changed the passcode.

Do not forget the passcode!

CHAPTER 3 | OPERATION

CLEAR ALL

This button displays a window that will allow you to erase the current program in the remote. When the button is pressed, you will be prompted to enter the current passcode. If the proper code is entered, the entire program in the remote will be erased.



WARNING!

This will erase the complete program in the remote with no way to restore it, except by reloading the program from the *Integration Designer*™ software!

If you inadvertently press the CLEAR ALL button, simply press the ENTER button without entering the passcode and you will be returned to the Control Panel page.

CHAPTER 4 | SPECIFICATIONS

Power	3.6 VDC, 1200 mAh Lithium-Ion Battery Pack
Power Management	Automatic On/Off (tilt switch)
Infrared Control Range	30 feet (9.1 meters) @ 60 degrees
Infrared Frequency Transmission Range	15 kHz - 460 khz
Radio Frequency Control Range	Up to 100 feet (30.5 meters) with optional System Interfaces/Processors
Radio Frequency Carrier	433 MHz
Operating Temperature	+32° F to +122° F (0° C to +50° C)
Operating Humidity	5% to 95% Non-condensing
Touchscreen Display	High-contrast STN LCD Digital Matrix 64 x 128 pixels (touchscreen never needs calibrating)
Display Size (H x W)	2.4 in x 1.3 in (61 mm x 33 mm)
Backlights	White LED (display), Blue/Red/White LED (keypad)
Nominal Run Time on Full Charge	6 hours minimum, continuous use (10 to 15 days on average use)
Standby Time on Full Charge	30 days
Battery Charge Time	3 to 4 hours
Total System Memory	256 K Flash (non-volatile) memory
Device Capability	Total number of devices is limited only by memory
Macro Capability	Unlimited steps in a single macro Total number of macros is limited only by memory Macro capability on every button
Communications	USB programming port
Dimensions (L x W x D)	9.75 in (248 mm) x 2.5 in (64 mm) x 1.0 in (25 mm)
Enclosure	High-impact molded ABS plastic
Weight	8.5 oz. (243 g) with battery pack
Warranty	One Year (Parts & Labor) / 90 days on battery

All specifications subject to change without notice.

CHAPTER 5 | TROUBLESHOOTING

If you are having problems with your T2-B Universal System Controller, please read the information below before contacting technical support.

If you continue to have problems, see Chapter 6 for more information on contacting RTI technical support.

DISPLAY IS DIM, BLANK OR UNREADABLE

- Make sure the battery pack connector is attached properly and the battery is charged.
- Try adjusting the contrast or backlight level from the Control Panel page (Refer to Chapter 3 for more details). By nature, the contrast of an LCD screen changes with temperature, so if the remote is cold the display will be dark and will return to normal as it warms.

USB COMMUNICATIONS PROBLEMS

- Verify that your PC is running Windows® 2000 or higher.
- Verify that the T2-B USB driver was installed the first time the T2-B was connected to your PC.
- Verify that the T2-B is present in the Device Manager within the Windows® Control Panel.
- Make sure you are using the programming cable that was supplied by RTI and that both ends are connected securely.
- Make sure the PC detects the presence of the T2-B. If it doesn't, unplug the USB cable, wait for about ten seconds, and plug it in again.
- If the download fails after some data has been transferred, try re-sending the program.

IR CODE PROBLEMS

- If you are using an IR repeater system, make sure it is working correctly with the original OEM remote. If not, you will need to troubleshoot the IR repeater system.
- If you are still having problems, try adjusting the IR code "Minimum Repeats" value in the Integration™ Designer programming software.
- If the IR code is executed inside a macro that contains multiple IR codes, try inserting a small time delay before the problem code. If there already is a delay, try increasing it.

CHAPTER 6 | SERVICE AND SUPPORT

For news about the latest updates, new product information, and new accessories, please visit our web site at:

www.rticorp.com

CONTACTING RTI

For general info, you can contact RTI at:

Tel. (952) 253-3100
Fax (952) 253-3131
info@rticorp.com

RTI TECHNICAL SUPPORT

At RTI, customer service and satisfaction is an utmost priority. If you are encountering any problems or have a question about your RTI product, please contact RTI Technical Support for assistance.

RTI provides technical support by telephone, fax or e-mail. For the highest quality service, please have the following information ready, or provide it in your fax or e-mail.

- Your Name
- Company Name
- Telephone Number
- E-mail Address
- Product model and serial number (if applicable)

If you are having a problem with hardware, please note the equipment in your system, a description of the problem, and any troubleshooting you have already tried.

If you are having a problem with software, please note what version you have installed, the operating system on your PC, a description of the problem, and any troubleshooting you have already tried.

If you are calling about a software or programming question or problem, please be at you computer when you place your call. This will considerably speed up the troubleshooting process.

For technical support or assistance with your T2-B, software, or accessories, contact RTI at:

(952) 253-3137
support@rticorp.com
www.rticorp.com

For questions regarding service or repair of your T2-B, contact RTI at:

(952) 253-3136
service@rticorp.com
www.rticorp.com

Please do not return products to RTI without return authorization.

CHAPTER 6 | SERVICE AND SUPPORT

Shipment of T2-B for Service

RTI will pay all labor and material expenses for all repairs covered by this product's warranty. If necessary repairs are not covered by warranty, or if a unit is examined which is not in need of repair, you may be charged for the repairs or examination.

If it is necessary to ship the T2-B Universal System Controller for service:

- Please pack it securely (we suggest that it be insured).
- Do not include accessories such as power cords or manuals unless instructed to do so.

You must pay any shipping charges incurred in getting your T2-B Universal System Controller to RTI. RTI will pay reasonable return shipping charges via a carrier of our choice to any destination within the United States if the repairs are covered under warranty.

A copy of the original dated sales receipt must be provided whenever warranty service is required. You will need this receipt to establish the date of purchase.

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